

REMARKS

I. Status Summary

Claims 1-20 are all the claims pending in the application.

Applicant thanks the Examiner for the courtesies extended during the interview of July 5, 2011. As agreed during the interview, Applicant amends claims 1 and 11 by way of this Amendment to more clearly recite the invention. In addition, Applicant amends claim 20 to be consistent with the changes to claim 1.

II. Claim Rejections - 35 USC § 103

Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamishita et al. (US 5,064,122) in view of Marelli et al. (US 5,224,471).

Claims 5-7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamishita et al (US 5,064,122) in view of Marelli et al. (US 5,224,471).

A. Claim 1

As noted in the previously filed arguments, the combination of Kamishita and Marelli fail to disclose “said centering means formed on a surface of the spray head that forms the expulsion channel at a location directly adjacent to a top end of the insert, the top end of the insert facing the spray profile formed in the end wall of the spray head”.

Kamishita fails to disclose the centering means (see Examiner’s detailed remarks in Office Action).

The Examiner relies on Marelli for disclosing the centering means, alleging that Marelli discloses centering means at a location adjacent to a top end of the insert (see page 3 of the Office Action).

However, as previously submitted and discussed during the Examiner Interview, Marelli's centering means is not at the top end of the insert, but rather, at a lower part of the insert (portion 9 of the insert). Fig. 3 illustrates a cross section of the alleged centering means, and Fig. 3 is a cross section of Fig. 1, taken along section 3-3, which is substantially distanced away from the top end of the insert.

Specifically, the alleged centering means of Marelli is the portion of the wall 3 which centers the cylindrical portion 9; this portion is illustrated in cross section in Fig. 3 which is significantly distanced from the top end of the insert. The other portions of the insert (see 10 and 15) are narrower than the inner surface 2 to purposefully allow for the annular cylindrical space (see Figs. 4 and 5), and thus, a centering means is not present at these upper portions of the insert.

Although there is no indication that the drawings are to scale, one of ordinary skill in the art would not interpret portion 9 to be directly adjacent a top end of the insert which faces the spray profile. If one were to estimate the distance from the top end of the insert to the area at which portion 3 contacts with portion 9 (that could be considered as having a function equivalent to a centering means), one would estimate this contact area to be about 1/5 - 1/4 (20-25%) the distance of the total length of the insert from the top. Thus, about 20-25% of the total insert length remains disposed between the centering means and the top end of the insert.

This cannot be reasonably interpreted as being directly adjacent to the top end.

In fact, the narrowed portion 10 is specifically provided between the thicker portion 9 and the top end because it is necessary for the Marelli's device operation. In particular, expansion chamber 13, located just after the portion 9 in the direction toward the top end, is described as being essential (see col. 3, lines 33-34). It is the cavity delimited by the wall 3 and the portion 10 which provides this chamber 13, and thus, one of ordinary skill in the art would not have thought to provide the centering means at the upper end.

In view of the teachings of Marelli, if one were to combine Kamishita and Marelli together, one would not have realized the claimed invention which includes centering means formed on a surface of the spray head that forms the expulsion channel at a location directly adjacent to a top end of the insert, the top end of the insert facing the spray profile formed in the end wall of the spray head.

For at least the foregoing reasons, a prima facie case of obviousness has not been met, and claim 1 is patentable.

B. Claim 11

A prima facie case of obviousness is not met against claim 11.

First, the Office Action fails to provide any rationale for combining the references. Instead, a conclusory statement is made that the combination of references discloses all the features (see page 5, line 1 - page 6, line 6). However, a prima facie case of obviousness must include some rationale underpinnings to support a conclusion of obviousness. See MPEP § 2142. Thus, a proper case of obviousness has not been made against claim 11.

In addition, a prima facie case of obviousness is not supported because the combination of Kamishita and Marelli fails to disclose every feature of claim 11. In particular, the combination of Kamishita and Marelli fails to disclose “wherein the at least one radial projection extends from the inside wall at a location directly adjacent to a top end of the insert, wherein the top end of the insert faces the spray profile formed in the end wall of the spray head”.

Kamishita fails to disclose at least one radial projection extending from inside the wall at the top end of the insert. Marelli suffers from this same deficiency. In particular, the alleged radial projection (tubular wall portion 3 that contacts portion 9 in Fig. 3) is not located at the top end of the insert. Fig. 3 illustrates a cross-section of the insert located considerably away from the top end (line 3-3 of Fig. 1) as discussed above with regard to claim 1, and there is no reasonable interpretation that it is located directly adjacent the top end of the insert which faces the spray profile.

Thus, even if there was a rationale for modifying Kamishita in view of Marelli, the combination fails to disclose this aspect of the claimed invention.

As such, claim 11 is not rendered obvious by the combination of Kamishita and Marelli.

C. Dependent Claims

The remaining rejections are directed to the dependent claims. These claims are patentable for at least the same reasons as claims 1 and 11, by virtue of their dependency therefrom.

Moreover, these claims are patentable due to their own recitations contained therein.

For example, claim 5 recites a numerical range of 0.03 to 0.08 mm for the offset of the central axis of the insert from the central axis of the expulsion channel. None of the prior art discloses this structural relationship.

Moreover, claim 20 is patentable because the combination of cited references fails to disclose that the centering means contacts the insert at the location directly adjacent the top of the insert.

III. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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